What is claimed is:

1.   A multi-mode wireless communication device, comprising:

a first baseband co-processor configured to execute low-level stack operations of

5   a first wireless communications protocol employed within a first wireless communications network;

a host baseband processor configured to execute a set of protocol stack operations of a second wireless communications protocol employed within a second wireless communications network and higher-level stack operations of said first wireless

10   communications protocol; and

a data communication channel between said host baseband processor and said first baseband co-processor capable of carrying data received by said multi-mode wireless communication device from said first wireless communications network or sent by said multi-mode wireless communication device through said first wireless

15   communications network.

2.   The device of claim 1 wherein said set of protocol stack operations comprises a complete set of protocol stack operations of said second wireless communications protocol.

20

3.   The device of claim 1 further including a second baseband processor in communication with said host baseband processor via said data communication channel, said second baseband processor being configured to execute low-level stack operations of said second wireless communications protocol.

25

4.   The device of claim 3 wherein said set of protocol stack operations comprises higher-level protocol stack operations of said second wireless communications protocol.

5.   The device of claim 1 wherein said low-level stack operations include physical

30   layer functions and bearer-specific stack functions peculiar to said first wireless communications protocol.

6.   The device of claim 5 wherein said higher-level stack functions include stack functions common to said first and second wireless communication protocols.

5   7.   The device of claim 1 wherein said host baseband processor is further configured to execute application-layer functions.

8.   The device of claim 1 wherein said first baseband co-processor includes:
        a first physical layer module for implementing physical layer functions,
10   a first bearer-specific module for implementing bearer-specific stack functions peculiar to said first wireless communications protocol, and
        a first buffer in communication with said first physical layer module and said first bearer-specific module.

15   9.   The device of claim 8 wherein said first baseband co-processor includes a second buffer in communication with said first bearer-specific module and said data communication channel.

10.   The device of claim 9 wherein said host baseband processor includes a common
20   stack functions module and one or more application modules, said common stack functions module executing functions common to said first and second wireless communications protocols.

11.   The device of claim 10 wherein said host baseband processor includes a third
25   buffer in communication with said stack functions module and said one or more application modules.

12.   The device of claim 1 wherein said first wireless communications protocol comprises WCDMA and said second wireless communications protocol comprises GSM.
30

13.   A method performed in a wireless communication device disposed for communication with first and second wireless communications networks in accordance with first and second wireless communication protocols, respectively, said method comprising:

5   executing low-level stack operations of said first wireless communications protocol within a first baseband co-processor;

           executing a set of protocol stack operations of a second wireless communications protocol and higher-level stack operations of said first wireless communications protocol within a host baseband processor; and

10   establishing a data communication channel between said host baseband processor and said first baseband co-processor capable of carrying data received by said wireless communication device from said first wireless communications network or sent by said wireless communication device through said first wireless communications network.

15   14.   The method of claim 13 wherein said executing said set of protocol stack operations comprise executing a complete set of protocol stack operations of said second wireless communications protocol.

15.   The method of claim 13 further including executing low-level stack operations of 20   said second wireless communications protocol within a second baseband processor in communication with said host baseband processor via said data communication channel.

16.   The method of claim 15 wherein said executing said set of protocol stack operations comprises executing higher-level protocol stack operations of said second 25   wireless communications protocol.

17.   The method of claim 13 wherein said executing said low-level stack operations comprises executing physical layer functions and bearer-specific stack functions peculiar to said first wireless communications protocol.

30

18.   The method of claim 17 wherein said executing higher-level stack functions includes executing stack functions common to said first and second wireless communication protocols.

19.   A multi-mode wireless communication device, comprising:

a first bearer-specific processor configured to execute low-level stack operations of a first wireless communications protocol employed within a first wireless communications network;

a second bearer-specific processor configured to execute low-level stack operations of a second wireless communications protocol employed within a second wireless communications network;

a primary processor configured to execute higher-level stack operations common to said first and second wireless communications protocols;

a radio transceiver; and

means for communicating data between said radio transceiver, said primary processor, said first bearer-specific processor and said second bearer-specific processor.

20.   The device of claim 19 wherein said low-level stack operations of said first wireless communications protocol include physical layer functions and bearer-specific stack functions peculiar to said first wireless communications protocol.

21.   The device of claim 20 wherein said low-level stack operations of said second wireless communications protocol include physical layer functions and bearer-specific stack functions peculiar to said second wireless communications protocol.

22.   The device of claim 19 wherein said primary processor is further configured to execute application-layer functions.

23.   A multi-mode wireless communication device, comprising:

a first integrated circuit configured to execute low-level stack operations of a first wireless communications protocol employed within a first wireless communications network;

a second integrated circuit configured to execute low-level stack operations of a second wireless communications protocol employed within a second wireless communications network;

a third integrated circuit configured to execute higher-level stack operations of said first wireless communications protocol and of said second wireless communications protocol;

a first data communications channel between said first integrated circuit and said third integrated circuit; and

a second data communications channel between said second integrated circuit and said third integrated circuit.

24.   The device of claim 23 wherein said low-level stack operations of said first wireless communications protocol include physical layer functions and bearer-specific stack functions peculiar to said first wireless communications protocol.

25.   The device of claim 24 wherein said low-level stack operations of said second wireless communications protocol include physical layer functions and bearer-specific stack functions peculiar to said second wireless communications protocol.

26.   The device of claim 19 wherein said third integrated circuit is further configured to execute application-layer functions.